AERT JOURNAL

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"MAGIC DOORWAYS" are being opened by Betty Girling for the National Educational Television program as she tells stories for imaginative children.

ON THE COVER, *"The Friendly Giant" tells his quiet tales for children on National Educational Television, produced by WHA-TV, Madison, Wisconsin.*

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The Child and Television

Despite the importance of this topic almost nothing is known about it.

By J. RICHARD SUCHMAN

Assistant Professor of Education, University of Illinois, Urbana. From a paper prepared for the 1957 meeting of the Society for Research in Child Development, University of Iowa.

● IN THE SPRING of 1955 the Kefauver Committee as part of a general investigation of juvenile delinquency conducted hearings on the effects of television on children. Dr. Paul F. Lazarsfeld, chairman of the department of sociology at Columbia University and an authority on research in mass media of communication testified that despite the recognized importance of this topic, almost nothing is known about it.[1]

The urgent need for research is apparent; first, in the fact that so many children are watching so much TV; second, in the fact that the content of most commercial television programs is strongly influenced by commercial interests with little regard for the welfare of the viewer and third, in the very strong possibility that the medium is having a pronounced effect upon the personalities of a great many viewers, particularly children.

It is an unfortunate paradox that an area which has caused such public concern in both lay and professional circles has not given rise to more than a handful of research

1. P. F. Lazarsfeld, "Why, so Little is Known About the Effects of Television on Children and What Can Be Done?" *Public Opinion Quarterly*, XIX, (1955), pp. 243-251.

studies. Why are we still very much in the dark? A look at the kinds of research done so far may hold the answer.

Of the studies that have been made to date, almost all can be placed in one of three categories: surveys, clinical observations, and experiments. Each of these approaches must be considered separately in assessing its value as a means of obtaining the kind of information that is needed.

● SURVEYS. By far the greatest number of studies in the literature have been of this type. Generally a questionnaire or interview technique is used to obtain data related to one or more variables. Assumptions regarding the significance of these variables are rarely reported. The majority of the respondents are either parents or children, although a few studies have sought information from teachers, law enforcement officers, and other professionals. Typically, the surveys have tried to sample the "effects of TV" upon a variety of behavioral or attitudinal variables in the child and the family as a whole. Where control groups were used, they were recruited either from families that did not have television sets or from one of those rare communities where no reception was available.

The questions that were asked usually dealt with (a) the nature of the viewing patterns and (b) the discernable effects of this viewing. "How long have you had a TV set?" "How many hours a day do you watch?" "What programs do you see?" Which do you like the best?" These are typical questions of the first type. Other questions pertaining to changes brought about by TV in such areas as school performance, leisure time activities, attitudes, interests, and patterns of family living constitute the second type. The answers were tabulated, percentages in the various response categories given, and conclusions drawn.

Paradoxically, in the midst of wide-spread uneasiness regarding the effects of TV upon children . . . .

The obvious limitations of this kind of research (which were only occasionally pointed out) need to be underscored. First, the assumption that is too often made that TV can be regarded as a single, undifferentiated, independent variable is at best a risky one. The fact that two children are watching an equal amount of TV does not account for the possible differences in the content of the programs they select, or for that matter the environmental circumstances of the viewing, the attention paid to program, or the degree of involvement. The survey approach is committed to the study

of variables that can be easily and objectively described and measured. It is therefore susceptible to the weakness of oversimplification. Children are bound to react to a given TV stimulus in different ways, yet they may exhibit similar surface responses to a questionnaire or survey. This source of error could be magnified when the feelings, attitudes, or behavior of the child are reported by a parent.

Secondly, the lack of adequate controls weakens even the superficial findings. If children in "TV homes" are found to be playing less baseball than other children, it is fallacious to conclude that the television viewing is causing this difference unless both groups are equated with respect to all other variables. As things stand today, it would be next to impossible to find any group of families without TV that could be successfully matched with a group that owned sets. Children who lack television experience today do so largely for socio-economic or geographical reasons, both of which are likely to influence behavior and attitudes nearly as much as television would.

. . . relatively little is known about the consequences of regular exposure to the medium.

A third serious limitation of the survey approach is that which is inherent in any research method that uses verbal responses to assess behavioral variables. Both validity and reliability are imperiled. There is no assurance that the questions or their answers have equivalent meaning among the respondents, or that any given answer is an accurate indication of the behavior in question.

● CLINICAL OBSERVATION. As a group, psychiatrists have expressed the most alarm about the effect of television viewing on children. E. D. Glynn is typical of those who have reported in articles case histories in which television is purported to cause, or at least intensify, emotional disorders. Concludes Glynn: "These, then, are traits television can so easily satisfy in adults, or foster in children; traits of passivity, receptiveness, being fed, taking in and absorbing what is offered . . . poor tolerance of frustration and delay, the demand for immediate satisfactions. The television set is easily and agreeably a mother to whom the child readily turns with the same expectations as to her."[2]

In one respect, this kind of observation and reporting has a great advantage over the survey. The clinician studies the effects of a unique pattern of viewing upon a unique personality. If a sufficient

2. E. D. Glynn, "A Psychiatrist Looks At Television." In W. Y. Elliot (Ed.), *Television's Impact on American Culture.* (East Lansing, Michigan State University Press, 1956), pp. 177-182.

number of cases indicate, for example, that violence on the TV screen tends to aggravate certain existing emotional disorders in children, there is at least the basis for a testable hypothesis.

On the other hand, clinical evidence is generally haphazard and inconclusive, unless collected in some systematic way. The nature of typical therapeutic interview usually precludes rigorous experimental design. Furthermore, a systematic bias toward the abnormal child in the selection of subjects limits the generality of the findings.

Stimulation of creative thinking and fostering of mental health are two directions of growth for TV that remain relatively untested.

● EXPERIMENTAL STUDIES. Only a few scattered attempts have been made to isolate specific variables of program content and measure their effect upon certain behavior variables. A typical example of this was a study by Siegel[3] to determine the relationship between fantasy aggression produced by an animated cartoon and the strength of aggressive drive immediately following the film. The hypothesis that the viewing of aggressive episodes reduces the overt agressive behavior of the child was not supported by the data, but the study nevertheless made a significant contribution to the literature in demonstrating that the viewing of aggressive episodes does produce in preschool children heightened tension and anxiety while the episodes are being watched. Furthermore, Siegel's contribution to the methodology in this area cannot be disregarded.

Studies of this kind seem to hold the greatest promise for gaining the needed evidence of the psychological effects of the many different aspects of television programs. As Martin has pointed out with respect to research on the effects of early training on personality:

"We must first seek regularity and orderliness in whatever degree they exist, within the individual event . . . . under given conditions. As we accumulate data about a number of such individual events, it may be possible to discover, through a study of similarities and dissimilarities among them, certain principles or laws, statistical in form, that may apply to all."[4]

This is a clear stand against mass surveys that lose the individual and his unique parameters in a sea of

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3. Alberta E. Siegel, "Film-mediated Fantasy Aggression and Strength of Aggressive Drive." *Child Development*, XXVII. (1956), pp. 365-377.

4. W. E. Martin, "Effects of Early Training on Personality." *Marriage and Family Living*, XIX. (1957), pp. 39-45.

ETV and the Teacher Shortage

● EDUCATORS, EVERYWHERE and at all levels, are greatly concerned about the supply of teachers to provide for the greatly increased enrollments predicted for the immediate future. Even the most optimistic predictions seem unable to come up with enough teachers to provide instruction for classes as we have become accustomed to handle them. The situation is most serious at the level of higher education because a much longer period is required to adequately prepare university and college faculty members than is required for elementary and secondary school teachers.

Reports on experiments using television as the medium of instruction suggest that this may be one answer, and an important one to the problem of faculty shortage. Washington University, St. Louis, for example, presented a freshman mathematics course over TV Station KETC and discovered that the students who took the course by TV earned higher grades and had a lower percentage of failure than did their counterparts in the classroom. The data revealed that 45.7 per cent of the TV students received A and B final grades while only 30 per cent of the classroom students received comparable grades. Only 4.5 per cent of the TV group failed the course compared with 11.4 per cent of the classroom students.

Chicago City Junior College provides a second illustration. Last year it began telecasting a two-year College of the Air over Station WTTW. These courses enrolled 1,300 students as compared with 2,500 who took the same courses in the classroom. Final examinations given in February revealed that the TV students earned grades at least 10 per cent higher than their campus counterparts.

● THERE ARE OTHER higher educational institutions engaged in similar investigations. More experimentation must be carried on wherever universities and colleges can secure facilities for telecasting classes. Can educational leaders afford to overlook any possible solution to the teacher shortage, especially one that holds as much promise as television?

—TRACY F. TYLER, *Editor.*

Teaching English by TV

English, like TV, carries on its back all that we do and say, see and hear

By **FRANKLIN DUNHAM**

Chief of Radio-Television, U. S. Office of Education.

● IF "A MAN'S REACH should exceed his grasp" as said by Robert Browning, then television should be within his reach, even though it be not in his present grasp.

May we add for our own purposes two additional lines for Rabbi Ben Ezra—"grow old along with me—the best is yet to be" and "a brute I might have been but I would not sink in the scale." It seems that television has come along just in the nick of time! It has come at the time when our *mass* culture is stressing the image more than the idea, the sensible more than the intellectual, the perceptual more than the rational. This is the viewpoint of Bishop Fulton Sheen who further points out that Arnold Toynbee credits the culture of all previous civilizations to a "creative minority," while the civilization into which we are moving may at last be achieved by an intelligent majority. Is it too much to hope for?

English as a language art, cannot possibly remain for long only as a specialized subject-matter field of research and study. It is analogous to what Professor Michael Pupin once described as a characteristic of light in relation to radio or electronic waves. This eminent scientist of our past generation said "radio waves are carried on the backs of light waves."

So English, as a *means of communication*—its utilitarian purposes—and as an art—its poetic purpose—is like light is to our physical world. It carries on its back, all that we do and say, see and hear. And all that we do and say, see and hear, can, in turn, be carried by television.

● IT SHOULD BE the perfect medium for the teaching of English and yet, up to now, comparatively little has been done with it in a conscious effort to make it serve these ends. It has served us well, nevertheless, and is constantly doing so, without any effort on our part to channel its potential in ways to bring about the greatest good. For example, it has been discovered that in Santa Fe, Indian children entering first grade who have had the advantage of television in their homes, progress much faster than the little Indian children who have had no contact with television. This is not only true of their ability to express themselves in a larger vocabulary but also applies generally to all the basic skills. A Russian emigre' who has now become a responsible citizen of Los Angeles, only a few years ago a tortured victim of a Soviet Labor Camp, gives credit to television for his present day partial, at least, mastery of English.

Millions of American children of pre-school age followed Frances Horwich on Ding Dong School with her fine articulation, correct pronunciation, and enriched vocabulary at slow-tempo for some years now — an antidote to the punch and pull advertising plugs and "surging commercials" which have assailed our ear-drums in an effort often to sell us something we did not want or certainly did not believe we needed. Even these commercials can teach us something for they do correlate pictures and words, a first-hand substitute for experience and, therefore, increase our vocabulary to that extent for good or ill.

"The world is too much with us, late or soon" and I can discover no way in which English teachers, or for that matter, teachers of any subject can change it. Long ago, when I began to teach (and a nonconformist teacher, I was) I had the bitter experience of seeing much of my efforts go to naught for my refusal to recognize the actual world about me, the world in which the pupils lived. Fortunately for me (and I hope for them), I left my ivory-tower in the wilderness and never have returned to it.

English is now taught by tele-

Dr. Franklin Dunham

vision on many grade levels. Twenty-three educational television stations, stretching from border to border and coast-to-coast have helped that effort but perhaps even more important has been the installation of some 200 closed-circuit television operations in our high-schools and colleges plus several in the elementary schools.

Favorite subjects in the elementary school are reading and spelling in the lower grades, descriptive stories well-told or dramatized, and English composition and grammar as taught at the 9th grade level in St. Louis, 5th grade level English in Pittsburgh and similar courses in San Diego, Philadelphia, Baltimore, Denver, Minneapolis, Atlanta, Seattle, and Detroit.

Closed-circuit television is simply a means of tying together many class-rooms through a television signal transmitted within a building or a group of buildings. The first one I recollect visiting was at Montclair State Teachers College, New Jersey in 1951, operated entirely by teachers in-training.

● THERE ARE AT LEAST two means of using television in the classroom, one lies in its *use of illustrative materials,* not otherwise available to the classroom teacher and another in its application to the lesson itself—*direct teaching.* This does not mean as is indicated in the over 400 telecourses now being offered for university credit over the country that it becomes *the whole lesson.* It's best use, to date, seems to be as an *integrated part* of a complete lesson.

The British, in their 1952 two-month experiment discovered certain program types which seemed to be successful in using television for illustrative purposes. (They are beginning a nation-wide television service to schools soon). These types were:

1) Clash of personalities in unscripted discussion of the topic under consideration.

2) Straightforward studio discussion of themes of personal interest.

3) Straightforward information broadcasts from outside the classroom.

4) Young people at their jobs.

5) Personalities brought into the classrooms.

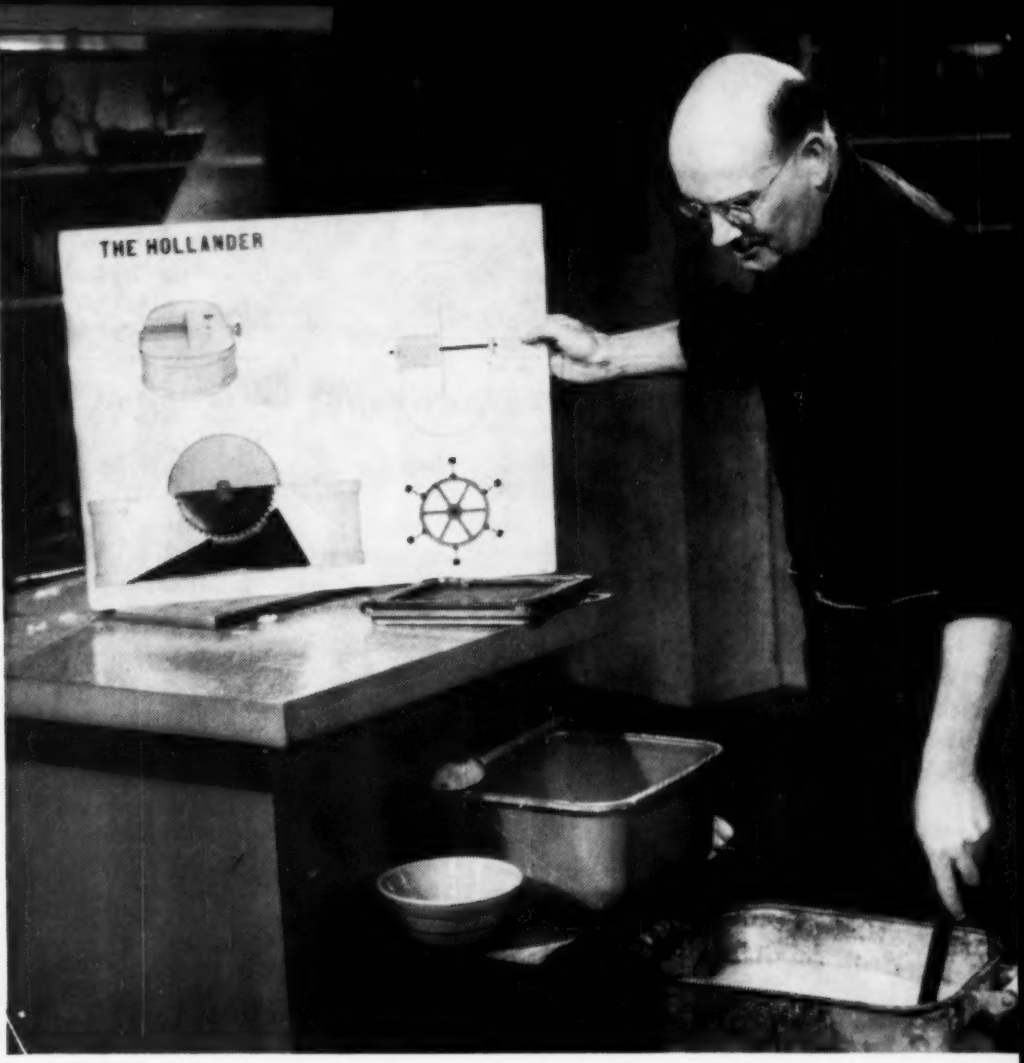
6) Poetic quality of artistic skills allied to the personality of the artist (a potter at work)

7) Imaginative exploration of studio-resources (spot broadcasts)

8) Exposition, reinforced by visuals.

● WE HAVE COURAGEOUSLY entered into the areas of direct teaching, as shown particularly at Hagerstown, Maryland where a 5-year experiment is under way under the combined auspices of the Fund for the Advancement of Education, the Washington County School Board, the Radio-Television Electronic Manufacturers with the U. S. Office of Education acting as consultants to the project.

Another nation-wide project now under way by the Secondary



LITERATURE COURSES have reached thousands of Americans through National Educational Television. Above, Dr. Frank Baxter, known for his Shakespeare series, demonstrates making of paper for "The Written Word."

Schools Association involves immediately: the Evanston Township High School in Illinois, the Brookline High School in metropolitan Boston and is planned to include New York, Chicago, the Los Angeles area schools and many school districts and high schools of varied sizes in many parts of the country. This is also an FAE project. Evanston has already made

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TV News Lab Costs

Administrators considering TV equipment find an area of confusion and controversy

By **BASKETT MOSSE**

Chairman, Department of Radio and Television, Medill School of Journalism, Northwestern University, Evanston, Illinois. Condensed from a speech at the annual convention of the Association for Education in Journalism.

• WHEN WE CONSIDER television equipment, we get into a rather complex area. It is a subject that can be very technical, very confusing, and unavoidably controversial. Usually it is all three, especially to the college or university administrator who must approve or disapprove sizeable television expenditures. An administrator must face a number of questions as he considers the installation of a closed-circuit television laboratory, designed primarily for teaching.

Is it absolutely necessary to have television studio equipment in order to teach professional television courses?

Unless we have some access to television studio equipment, we simply cannot do a professional job of teaching television on the college level.

You can lecture, draw pictures, and use every possible device to explain what is involved in television program production; but until you have been a part of the real thing and under professional supervision in the studio laboratory, you are not able to comprehend what the work entails.

Your severest critic of teaching without equipment will be the graduate who manages to get himself a television job and suddenly discovers he doesn't know a thing about the work for which he has supposedly been trained. At this point he is likely to feel—and perhaps correctly so—that he has been short-changed.

We must have equipment to do a good job of teaching.

What subject matter will be taught in the television news studio laboratory?

The first and most important function of today's news and public affairs broadcaster is that he report and interpret news—in the studio and on the scene—in such a manner that it is completely and accurately understood, no matter how complex it may be. The mere recitation of facts is no longer enough. The demand for people who can do news interpretation is increasing. So it is our responsibility to supply them.

Unfortunately, the television news student cannot spend all of his time on matters of content designed strictly to make him a better interpreter. This area definitely must receive the greatest emphasis. But we cannot escape the fact that in television the newsman must be acquainted with a good many technical subjects which are absolutely essential to his becoming an effective news analyst.

Assuming the journalism student has been given a good general education, has had fundamental journalistic courses in reporting, editing, and law, and has learned in a general course the role of television in today's society, he then is ready to tackle his professional television work which will include the following: Television and Radio News Writing, Editing, and Reporting; Planning, Directing, and Producing Television News and Public Affairs Programs; On-Camera News Presentation; Studio and Control Room Procedures; Motion Picture News Film Production (Shooting, Writing, Editing); Television Graphic Arts (Still Pictures, Maps, Charts, Titles); Television and Radio Newsroom Management; Remote Broadcasting for Radio and Television.

What major equipment items must be purchased for the television studio laboratory and what do they cost?

You have two practical choices of equipment: (1) Image Orthicon and (2) Vidicon. These names refer to the pickup tubes in the television cameras.

Image Orthicon equipment is used by nearly every television station on the air. The Image Orthicons are the big studio cameras.

Vidicon equipment, although used by some stations, has a wider closed-circuit industrial or educational application: The Vidicon tube is used in the best film chains and is generally considered superior for film reproduction.

What is the basic difference?

The Image Orthicon tube is a great deal more sensitive than the Vidicon. In other words you need more light when using the Vidicon camera than you do when using the Image Orthicon. Image Orthicon cameras, of course, have many more refinements for studio work and can perform generally better than our present Vidicons. The question is whether they perform enough better to justify the

greater cost in the teaching situation.

Better Vidicon cameras are made every year, and there is considerable improvement being achieved in the Vidicon tube itself.

There is a tremendous difference in price.

A complete two-camera Vidicon system including film chain, camera controls, sync generator, switcher-fader, monitors, lighting equipment, all accessories, audio equipment, and installation will cost approximately *$25,000.*

The same items in an Image Orthicon setup — according to an estimate by RCA on August 1, 1955 — would cost approximately *$100,000,* with the RCA 10 per cent cent educational discount taken out.

Can you get along with less equipment?

You can do something, of course, with only one camera. A few commercial stations now operating have only one. But to do a good teaching job, you need at least two cameras and one film chain. Most students will be going to stations with at least two cameras. One camera limits you in news because you are not able to use film or still pictures effectively, if at all.

It is interesting to note that of the $100,000 RCA estimate, only $5,000 is for audio equipment. For that figure you can set up an excellent radio-only studio in other words: *$95,000 for video, $5,000 for audio.*

Minimum lighting instruments necessary for one studio (black and white) will cost approximately $1,500 including minimum switching equipment. Careful planning should go into power requirements for the lighting equipment. There must be ample circuits to carry the high power lead.

What engineering assistance is necessary in setting up the closed-circuit television system? How much does this cost?

You must have an engineer, and you will save money by getting the best one you can find. As you can imagine, one wrong bit of advice might increase your expenditure several thousands of dollars. You will make some rather important decisions based on the advice of your engineering assistant.

The engineer will install your system, and there are certain things he will have to build in the studio. There is no way you can avoid this.

A capable video engineer is hard to find unless you are prepared to pay him a lot of money. It may be possible to employ a man part-time who is working full-time for a local television station. This can be an ideal arrangement and should be explored. You will have to pay this man from *$2.00 to $5.00 per hour,* depending on the local situation.

My advice is not to employ student engineering help unless you are absolutely sure the man has had video experience. This may have been all right in radio, but television equipment is far more complicated and requires a better engineer for installation.

Is it possible and/or advisable

to set up a combination radio and television studio laboratory?

It is both possible and advisable to set up a combination radio and television studio.

At Northwestern in the School of Journalism, we have three combination studios, any one of which can be used for radio or television. One studio is arranged so TV cameras can shoot through glass to pick up a newscaster from another studio normally used for radio only. It is also possible in this setup for a radio news program to originate from one studio, for broadcast over the local commercial or educational station, while a television news program is being produced in an adjacent studio on closed circuit.

Is it advisable for several schools within the university to share a closed-circuit laboratory?

It is possible, of course, but frequently not advisable.

You will find that once television equipment is installed and courses are offered, classes will become quite large. You will quite likely have a scheduling problem, with laboratories being held at night. You may even find yourself with an 18-hour operation.

We have found it necessary to operate two complete and separate closed-circuit systems at Northwestern — one in the school of journalism and one in the school of speech.

Television cannot be taught on a mass basis. Individual instruction is necessary, and studios at best are not large.

Who will operate the closed-circuit television laboratory as it is being used for teaching? Is an engineer necessary?

If you install an Image Orthicon system, I think you will find it absolutely necessary to have at least one full-time engineer on duty whenever the studio is in use. As a matter of fact, you may need more than one full-time man. Student engineering assistants may be used to good advantage here but only under the supervision of a responsible full-time man.

It would be ideal to have one video engineer and one audio man helping you in the control room.

Since an inexperienced man at the camera controls can "burn" your camera pickup tube, I operate under the ironclad rule that only I or my department assistant operate the camera controls. The wrong turn of a knob can ruin a Vidicon or Image Orthicon tube. An Image Orthicon tube costs $1,200. The selected Vidicon is $565.

What will it cost to keep the closed-circuit television laboratory in good working condition for a period of one year?

Naturally, this will depend on how much and in what manner the equipment is used. Television equipment needs constant maintenance. It cannot be expected to perform, as the literature says it will, unless there is regular maintenance by a good engineer. If your equipment is used 4 hours a day, you may be able to get by with only 8 hours of maintenance a

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ETV in America Today

The great achievements now attained are dwarfed by the goals still ahead

By **RAYMOND WITTCOFF**

St. Louis businessman, trustee of St. Louis Educational Television Commission and of the Educational Television and Radio Center.

● THE ACHIEVEMENTS thus far of educational television have been impressive!

First, there was the victorious campaign to get the channels reserved. Twenty-three non-commercial stations are now on the air and others are under construction. Another vitally important achievement has been the creation of a national program service. The Educational Television and Radio Center is a going concern distributing programs each day to the entire network of educational stations.

It has been estimated that about 50 million dollars have already been put into educational television nationally and locally. This includes foundation grants, appropriations by legislatures, universities and school boards, corporate gifts, and countless small contributions from the viewing public. The grants by the Ford Foundation and its Fund for Adult Education and Fund for the Advancement of Education form a splendid example of how private philanthropy can serve society by providing venture capital for pioneering. These grants have stimulated much support from other sources.

Another achievement has been the proof that an educational station can render a respectable service for a whole year for an amount less than what a commercial network sometimes spends on one ninety-minute spectacular. There are some people of unusual competence and dedication and nerve who serve on the staffs of these stations. They have gotten

remarkable mileage out of the dollars invested. Of course, all of the stations now on the air could do a much better job if their combined annual budgets amounted to only half of what one company spent last year for television instruction for the American people in the purchase of the right kind of soap.

If we pause now to look back, we can see that non-commercial educational television has come a long way. And then if we look ahead to the great goals which have inspired our efforts, I think we shall see that the movement still has a long way to go.

Although the aggregate of funds raised nationally seems substantial, the financial position of most of the stations is precarious. A good stiff breeze would blow some of them away. And we have seen that the large majority of the reserved channels are unused.

Speculation about the financial future of the stations must take into account several questions: Will more state legislatures, universities, and local school boards follow the lead of the few who have already perceived that support for educational television in the long-run will be an economic imperative for educational institutions? Will more private corporations and foundations follow the few who have recognized in these stations unique opportunities to extend the value of their philanthropies to the community at large? Will fund-raising techniques be improved for bringing in larger numbers of small annual contributions from the viewing audience? Other questions may be raised. Should consideration be given to levying special taxes in communities to give the stations a long-run stability and independence from the whims of legislative bodies or the vicissitudes of annual fund raising? Or should there be some experimentation with subscription television by non-commercial educational stations which would require payment by the viewer of an annual fee to get the service?

The pattern of financing may vary from station to station, but the problem everywhere is essentially the same. Through one means or another they will be given the support they need when they perform a service that a truly civilized community cannot afford to be without. The building of stations for the unused channels might be accelerated if the FCC solves the UHF problem and if newly developed low cost low power equipment installations prove feasible. But real impetus will be given to new station building when the stations now on the air become models

Self-government assumes that people are parties to a continuing conversation about their common concerns.

Raymond H. Wittcoff

which other communities will feel compelled to emulate.

The movement will live and grow if the stations can rise above the trivialities to a comprehension of the unique role they may play in helping the nation solve several of its most critical problems. What are some of these national problems that educational television can help solve?

● AS THINGS NOW stand our society is not equipped to fulfill its primary obligation which is to educate the rising generation. The birth-rate has risen sharply. The number of people going into teaching has declined. A teacher-shortage problem of startling dimensions has emerged. It has been estimated that the nation's schools were short 165,000 teachers this year. Who can estimate how much greater is the shortage of good teachers? Various measures have been suggested to cope with the crisis. The use of television seems to be one of the most promising.

The higher learning in America faces a grave crisis. The rising tide of enrollments threatens to overwhelm the colleges and universities. According to a front-page report in the New York *Times* on a study completed by the Educational Policies Commission of the National Education Association, they will have to double their facilities by 1970. This would mean spending more money than has been put into the building of colleges and universities in the more than 300 years since Harvard was established in 1636.

Even if this money should be made available, can enough good college teachers be found? The same study predicts a shortage of 300,000 college teachers in fifteen years. Some educators insist that the effort to meet the need would force a massive intrusion of mediocrity into the teaching ranks. Others argue that our commitment to the democratic principal of equal educational opportunitiees for all compels us to meet the need. And, so the dilemma: Do we do violence

to the higher learning by corrupting its quality or to our democratic principles by limiting their application?

We have been told that the nation's industry and its defense are threatened by a shortage of scientists and engineers. We have been aroused by the revelation that the Soviet Union is training many more than we are. We are graduating only half the number of engineers we need each year. Half our high schools are without courses in physics or chemistry. A large electrical industry in St. Louis arranged for some of its employees to learn the math that they should have learned in school by enrolling them on company time in a college math course broadcast by KETC. It would be ironical if a nation that places such a high premium on technology did not apply it to the solution of this problem.

Do we do violence to the higher learning by corrupting its quality. . .

This brings to mind an even more serious problem that confronts our republic. It is more than the superiority of our industry and defense that distinguishes us from the Russians. It is the practice of self-government. A self-governing society cannot be secure unless its people are as wise as they are powerful. The education of the Russians may be aimed strictly at the building of the State's power. Our education must have a higher aim: the wisdom of the people. In a self-governing society everyone is both ruler and ruled. Everyone needs the liberal education that a ruler ought to have. This involves much more than formal education. The practice of self-government assumes that the people are parties throughout their lives to a continuing conversation about their common concerns. The democratic community is held together and moved forward by communication. Our democracy is threatened by a deterioration in the character and extent of public communication about important issues. Several factors seem to be contributing to this deterioration. The performance of the mass media is one of them.

. . . . . or to our democratic principles by limiting their application?

With the rise of the metropolis the town-meeting vanished, and the media of mass communications became the principal vehicle for public discussion. The understanding and judgment of the people can hardly be advanced by the partial, superficial, and fragmentary treatment which most of the mass

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ETV and the Armed Forces

Discussing areas of mutual interest—programming, course materials, research

By **CHARLES J. McINTYRE** and **MILES R. PALMER**

Chiefs, respectively, of the Educational TV Branch and the Education Division, Office of Armed Forces Information and Education.

• THE OFFICE OF Armed Forces Information and Education of the Department of Defense is in a peculiarly strategic position to contribute to—and benefit from—educational television. The purpose of this article is to discuss three general areas—programming, course materials, and research—in which this Office and ETV seem to have mutual interests.

• PROGRAMMING: This Office supplies programs to the Armed Forces television stations which comprise a network of overseas stations located in such diverse parts of the world as Greenland, Saudi Arabia, and Okinawa. At present there are 23 stations in operation reaching an estimated audience of over two hundred thousand servicemen, civilian employees, and their families. The stations have limited live-programming potential and most of them telecast news and occasional programs of local interest. However, the principal program fare consists of kinescopes of commercial shows. Some of these, of course, are "educational" as, also in this category, are industrial films, and films pertaining to Armed Forces information. However, it is doubtful if these sources will ever produce enough really good educational programming to satisfy the requirements implicit in the enabling Department of Defense directive which requires that the stations contribute to the educational growth of American servicemen.

It would seem, therefore, that a rapprochement between the Armed Services network and the civilian educational network would greatly benefit the former by providing it with a pool of outstanding educational programs. Conversely, it would seem that there might be a large and extremely valuable

public relations dividend to educational TV since hundreds of thousands would receive their first introduction to non-commercial TV through the best that ETV has to offer.

● COURSE MATERIALS: Through its operating agency, The U. S. Armed Forces Institute (USAFI), the Office of Armed Forces Information and Education is responsible for providing correspondence courses for servicemen in all basic high-school subjects, in the first two years of a general college curriculum, and in numerous technical and vocational subjects. The texts and tests for these courses are also made available for group-study classes, i. e, classes led by a teacher locally procured.

Unfortunately, course completion, if not achievement, in correspondence courses suffers due to a lack of a teacher to pace and to motivate the students, and to help them understand so that they can progress. Also, while group-study students enjoy the advantage of having a teacher, it is clear that in military, as in civilian education, teachers vary a great deal in their ability and preparation for teaching. Moreover, the growing shortage of teachers in civilian life is certain to be reflected in military education. Consequently, it has been apparent to us that some supplement for the conventional text, study-guide, and frequently inexperienced (or unavailable) teacher is needed. Motion pictures, of some kind, appeared to be one answer.

Therefore, we undertook a pilot project producing for each of several high-enrollment USAFI courses a series of kinescopes of first-rate instruction. In general these telecourses, as we have come to call them, are arranged in such a manner that for each lesson in the USAFI course there is a one-half hour film in which the instructor discusses, demonstrates, and elaborates upon the most important and difficult parts of that lesson. It is our expectation that these films will be used to bring instruction to correspondence students who now have no instructor, or to group-study students whose instructor is only minimally qualified. He can best serve, we believe, by answering questions and extending the lesson rather than by himself carrying the major teaching burden. Lastly, by showing films over the Armed Forces TV stations, we can project outstanding instruction into the homes and barracks of servicemen and their families. We hope that the effect of the films will be 1) to increase enrollment, completion, and achievement among correspondence students and those who have only minimally qualified instructors and 2) to increase the educational level of the installation generally (in the subject matters concerned) where they are shown over TV.

We turned to educational television stations to produce these films for us for two principal reasons: 1) It is only in the field of educational television that one finds the interest and experience

necessary to successfully present an extended series of instruction before a camera while taking cognizance of the advantages and limitations thereby implied. 2) It was imperative that the traditional costs of film production be cut drastically if this idea were to have any really practical application to the Armed Forces. The ETV people were able to do this for us partly because of the inherent economies of the kinescope process and partly because they, much better than most motion picture people, understand that a number of production short-cuts can be taken without harming the instructional effectiveness of a presentation in the least.

Our first courses were produced by television station WQED in Pittsburgh, Pennsylvania. From there we acquired Beginning Algebra I and II and Practical English Usage, I, both high-school courses. Each of these three semesters has 16 one-half hour films. The teachers both had had experience on WQED's "Adult School of the Air." Next, Michigan State University's station WKAR-TV produced films integrated with the USAFI course in American History I and II, again at the high-school level. There are 20 half-hours in the first semester, and 18 in the second. We took advantage of a fortunate situation at WHA-TV, the station at the University of Wisconsin. Quite independently of our project, they were going ahead with an over-the-air course on the American Federal Government. The instructor had formerly prepared the USAFI study guide and planned to use the same format for his TV course. Therefore, instead of the special production we have usually found necessary, we were able to acquire a kine of the University telecourse. It is our hope that similar cost-sharing arrangements can be made for additional courses. Films on General Psychology and College Chemistry are in production. The latter course was selected because it gave us an opportunity to study the effect of giving students, who now get no laboratory experience, whatever, at least the opportunity to observe good laboratory techniques.

The instructors are all highly qualified high school or college teachers who, in addition to considerable classroom experience, have had experience teaching over TV. Thus, they are familiar with the special problems of film or television instruction. In many respects the filmed lessons are quite similar to classroom lectures. The major differences are that these teachers are a good deal better than average, they have prepared their material with greater care than is usual (although not working from a word-for-word script), and they have made better use of audio-visual aids than is common. They have tried to make the lessons interesting, of course, but their principal objective was to present sound academic instruction, not entertainment.

In developing their instruction

the teachers assumed that the students would have and would use the other elements of the USAFI course such as the text and study guide. In other words the films are intended to supplement the basic printed material, not to replace it. USAFI changes texts frequently to insure that the books being used are among the best available. In order to avoid obsolescence of the films with each change of text, the instructors have been careful not to refer specifically to a particular text. Easily changed course outlines which relate the films to the current text are available to students.

As this is being written the films are being used at about six overseas TV stations and, by conventional projection, at various Army and Air Force installations as well as on several capital ships of the Navy. The films were placed at these various installations selectively so that desired data about their effectiveness could be obtained. General distribution of them is planned for the fall of 1957.

The research which is discussed in the final part of this paper is not yet far enough along to permit any conclusions to be drawn from it. However, the films have been well accepted by nearly all Service education personnel who have seen them. They have predicted that the films are going to have a profound impact on the education program of the Armed Forces.

● RESEARCH: The Office of Armed Forces Information and Education has a long and rather distinguished tradition of research aimed at evaluating its efforts. (The authors can say this not immodestly, having had no part in it.) A continuation of this tradition was implicit in the telecourse project from its beginning. Hand in hand with the development of the films went the development of research design which would enable us to determine the effect the films were having and thus help determine what the future course of the project should be.

For example, we want to be able to demonstrate the effect of showing these films—over television or by conventional projection— on enrollment, course completion, and achievement as compared to correspondence and group study. Focusing our attention specifically on TV, we would like to demonstrate the effect these films are having on the level of knowledge of the non-enrolled, or casual, viewer and we want to relate this effect whatever it may be to audience characteristics, to course characteristics, and to viewing habits. This problem, it seems to us, is a central one not only for the educational use of Armed Forces television but also for educational television in general. Far too little is known of the teaching effectiveness of over-the-air TV. The question can be more readily investigated in the Armed Forces since each station serves a closed universe, so to speak, whose population is much more accessible than the populations served by most ETV stations.

ETV in America

Continued from page 19

media give the important issues. Our generation has to think through some of the most critical questions that this or any other nation has ever faced. Decisions we make about the ordering of our civil life will determine the future of freedom. The course we steer in world affairs involves life or death questions for the whole of humanity.

The educational stations can play an important role in elevating and extending public discussion in our communities. If they rise to this challenge, they can be powerful instruments for political education and civic progress.

There is still another way to look at the educational needs of the nation, and here again television has a special importance.

For the first time in history a whole people has abundant free time. The shortening of working hours and the lengthening of the life span leave us with more time and energy than we know how to use. Leisure, like political power, can be a snare and delusion to those who win it without acquiring a certain wisdom in its use. Automation while promising to lighten our burdens, exposes us to the threat of being bored to death.

A recent survey showed that the average American adult spends more time watching television than anything else he does except working and sleeping. If this is true, it would indicate that televiewing has become the final goal of our lives. On the premise that there may be some higher ends to our temporal existence, the educational stations could serve no finer purpose than to drive us away from our television sets occasionally. Perhaps they can do this by encouraging us in the pursuit of some of the interests and activities that are proper to the nature of moral, intellectual, spiritual, and aesthetic beings. Television can direct us toward, as well as distract us from the best in books, music, and art. It can have a vitalizing or a lethal effect on conversation in the community. It can be a mirror that reflects the lowest common denominator of our interests or a beacon that illuminates our lives.

A College of the Air could go far toward stimulating people to a life-long interest in learning. But, as in the case of civic education, learning for leisure involves types of programming beyond formal courses. Finding new ways to attract many more millions to the world of learning is a challenge to all of the imagination and resourcefulness that educational television can muster.

It seems to me that the paramount aim of the educational stations should be to broadcast what

is best in art and thought, to project throughout the land what Whitehead called the "habitual vision of greatness".

● CAN THE LOCAL educational stations do all these things by themselves? Obviously not. No one community can make available to its station the resources in men and money adequate for the large purposes that we have been discussing. That is why it has been evident from the beginning that the success of this movement requires a strong national program service. The Fund for Adult Education recognized this when it established a national Educational Television and Radio Center, and gave kinescope equipment to many communities so that the best programs produced at each station could be recorded and distributed to the network. The field for a program exchange transcends these stations. One can envisage an international exchange that could do much to foster world cultural relations. But the Center has to function as more than an exchange center if the movement is to succeed. It has a more affirmative role to perform in the creation of programs that may bring distinction to the movement.

In stressing the need for a strong national program service I do not mean to deemphasize the importance of local programming. The stations are controlled locally. It is expected that they will continue to originate most of their own programs. Each community should feel the impact of its own educational and cultural institutions. It should have a television service that focuses attention on local issues. The stations will develop varying patterns of programming which reflect local needs. For example, some stations may be especially useful for agricultural extension services.

Freed from the advertiser's compulsion to appeal always to the largest possible audience, the noncommercial station can direct programs to smaller audiences with special interests. However, this freedom may lead to an excessive proliferation rather than an elevation of purposes. Educational stations have shown us how to bake cakes, kill rats, arrange flowers, wrap bandages, fix plumbing, buy stocks and darn socks. Some of the stations may develop a laundromat theory of educational television according to which any responsible party with a program that would teach someone something about anything could use the facility.

The National Center has the independence with which to set its standards high and to resist a trend toward trivialization. The Center, it seems to me, should concentrate its resources on a few great goals. Progress toward each of these goals requires a national effort, for in each case it would seem to be a matter of getting the first-rate men to do the programs. The distinction between the competent and the creative, the difference between what is good and what is best can be of decisive importance if the aim is to make a real impact on the mind of America.

TV News Lab Costs

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week. Some weeks, of course, you will have to have a lot more. This I would say is an absolute minimum.

Life of electronic tubes cannot be accurately predicted. The only thing we are sure of is that eventually they will go bad.

RCA's best figures show commercial stations getting *750 hours* on the average out of Image Orthicon tubes, depending on how much "sticking" the stations will put up with. The image tends to stick on the picture tube as it ages. The larger, more quality-conscious stations will change tubes more often.

The Vidicon tube has a greater life. RCA says the average life of the Vidicon tube is close to 3,000 hours. It is not difficult at all to "burn" a $1,200 Image Orthicon tube. The Vidicon, being less sensitive, is less susceptible to "burn."

I would say with careful operation and planning, you may be able to operate and maintain a two-camera Vidicon system with film chain for $3,000 a year. That would include engineering fees at about $2 an hour plus replacement parts. Again, this is a minimum figure and is based on the assumption you will not ruin a Vidicon tube during the year.

Image Orthicon maintenance and operation will cost considerably more.

What minimum equipment is necessary for the teaching of motion picture news film production? What does it cost?

You cannot teach television news without getting into the rather time consuming business of motion picture news film production. *A TV newsman must know film.* Specifically, he should be acquainted with the techniques of shooting 16mm news pictures, editing sound and silent news film, and writing news film narration.

In order to equip yourself to teach 16mm silent shooting and editing, you will spend a minimum of $2,000. This will include two 16mm cameras which means you will be able to handle no more than 10 students in a class.

How much will it cost to operate the motion picture news film laboratory?

Your only significant items of expense are the cost of film and film processing. Perhaps once a year you will have your cameras checked and lubricated. That will cost you $25 per camera, depending on your local service charge.

We buy film in 100-foot spools because our cameras accommodate them. We can save a little money by buying film in bulk and rewinding it on 100-foot reels, but you may get exposed spots on your film from static electricity when you do this.

We operate one lab a week, and three people will shoot 200 feet in

each lab. If a student wants to shoot more, he buys his own film. We do not charge a lab fee in the course, although that may be desirable to pay for the film.

What are some of the miscellaneous equipment items or services required for the television news laboratory?

One or more news wire services, preferably trunk wires.

Daily news picture service, such as AP, UP, or INS Facsimile which will supply 50 pictures each day.

One or more Polaroid cameras with one copymaker.

TV monitors for viewing in class rooms and perhaps student lounge.

Flip stand for still picture projection in studio.

Filing facilities for film, still pictures and local news.

Tape recorder.

Mounted maps for studio.

Weather map with glass front, mounted in studio.

Air-conditioning (You will have to have it for studio.)

English by Television

Continued from page 11

preliminary reports. There, 25 classrooms have been equipped, divided into 3 units. Unit A is used for English on the 12th grade level. The emphasis is on speech, the subunits are: reading, writing, listening, and speaking. The lessons are projected from a studio-classroom. A cadet teacher is in each receiving class room. The TV teacher is in the orginating studio-classroom. All rooms are wired for talk-back, allowing questions during the program-lesson. Time is allowed for alternate classrooms to participate. Ninety students participate. The lessons involve lecture demonstration, discussion, speech and group activity. The TV teacher may call on any student in any classroom. A small assembly hall brings them all together on occasion for review and questions. That is Evanston.

At New York University, Freshman English is received by all registered freshmen in one television course. At NYU, some 400 students in 8 class-rooms were taking the English composition course together. The class receives the program from one studio. Two teachers participated and a student theme was visibly presented for criticism. There was no talk-back there. The head of the English Department, an old newspaper

CORRECTION

In the March issue a WWWW item gave Mrs. Helen Straus as program director of WQXR, N.Y. It should be Mrs. Eleanor Sanger. Mrs. Straus is director of educational activities for WMCA, N.Y.

man, was the guest. The essay was on *Liberty*—United States style. By deft re-phrasing, by the elimination of generalities and more apt illustrations and paragraph rearrangement the Essay on Liberty (N.Y.U. 1956) was made to glisten as if it had just left the pen of Ralph Waldo Emerson (or I should say, Allan Nevins).

If we had been in Detroit, at Wayne University, Professor Lloyd would have pooh-poohed this approach to good writing (as he no doubt is doing over their TV outlet). He would have shown us how to build sentences to a pattern stressing linguistic geography, language as a means of communication, oral skills in the sending pattern (the Associated Press uses them now in its regular service) and made us conscious of the sound-pattern of our whole effort. I make this contrast to suggest that television is only a *means* not an end nor an entity in itself and can carry therefore any form of teaching. Already it has put our teaching in the fish-bowl for all to decry or admire! In the Chicago Junior College program, 786 students are enrolled for freshmen English. There is no registration fee nor tuition—and high-school students in the Chicago schools may take the course for advanced standing. This they receive in their homes, in the early evening or late afternoon hours.

To return to Hagerstown, where 12th grade English is being taught to multiple classrooms at South High. This is a course in writing. The entire English department prepared these lessons. They have what they call teaching-teams, teachers alternate as TV teachers. The English class for vocational students opens at 9 a.m. The lesson is 25 minutes, students are prepared for this TV integration at 8:45. They carry the lesson on at 9:30. The English class for the liberal arts students opens at 9:15. Their program begins at 9:30. It closes at 9:55 and the lesson goes on with the individual teacher. No talk-back system has been arranged. There is plenty of opportunity to talk-back when the TV integration is over. The first lesson was on: *The Topical Sentence* (implied or stated) supporting or contrasting points of its development through the theme, the transitions, the conclusion (or clincher). The lesson-plan called for the development of detail, reasons, examples, comparisons, contrasts, or combinations of any or even all these component parts of the theme. *A Sentence Builder* (visualized) was correllated with the text. The text was: "The World of our English Heritage" by Bailey and Leavell. It was followed but not religiously followed to the exclusion of other references.

The second lesson to the same grade, but this time to liberal arts majors, was partly on British Humor.

Then a discussion of British pageantry. A section in contrast of British geographical depth and U. S. scope. A discussion of tradition and the three common influences

in British writing the sea, and the countryside and dear old London! Then came poetry; the transition came through Wordsworth! Our own Edgar Allan Poe so close to my Virginia roots and, to my delight, Robert Frost, the poet of New England and particularly, Vermont, as pure as the air it breathes and as exalted as the Verde Mountains that rise from its lovely valleys! The value of poetry was discussed, various styles, the purpose of poetry (has it one? or is it all purpose) and finally, a summary. Good English writing fare! I loved the lesson!

About 300 bright-faced young people received this program in four large classrooms. Each classroom had four present-day receivers, plenty of light to write and take notes. About 20 youngsters viewed each receiver, so placed as to give perfect eye-reception.

Was there any advantage in using this type of TV integration? The lesson represented the best thinking of the whole department. The visual illustrations were superb. (You would have needed four sets of them for those four large classes but the students would not have been able to see them without projection.) One teacher carried the major teaching burden. Four teachers carried on the lesson. Did we save space or eliminate the necessity for teachers? NO!

Was interest attracted and held? Yes, 95 per cent attention by observation. Is this normal? Will we develop greater writing skills by this new device of a TV integrated lesson? We don't know! We have a strange, uncanny feeling it was a better lesson than the run-of-the-mill teaching we get in our schools. This is no reflection on individual teaching. The lesson *was* better prepared. We did get greater concentration by directed attention within the frame-compass of a TV receiver. Will the novelty wear off?

I don't know. The novelty has not worn off for good teaching or the long history of teaching. Socrates died beloved by his stulents. Mr. Chips lives in the hearts of every British school-boy and I hope his counterpart, the understanding teacher lives in the hearts of all our American high-school graduates.

Child and TV

Continued from page 6

statistics. It is also an argument for more than the clinical observation approach, that fails to isolate specific relationship for intensive study and critical evaluation.

Now that the suspicions of many that TV in some way is having certain undesirable effects upon some children have been partially confirmed, it remains for the researchers to determine with greater precision the immediate and latent reactions of individual children to specific aspects of TV programming. This seems like a tremendous task, but it would not

be started from a point of complete naivete. Present knowledge of personality dynamics and learning processes should indicate hypotheses that need to be tested. Questions such as the following need answers: Does violence in TV lead to aggressive behavior in the viewer? Do some programs create conflicts for some children? To what extent can TV shape or reinforce individual values? Do some programs tend to encourage passivity or dependence? What are the cumulative effects of repeated involvement in highly tense dramatic episodes? These questions and many more like them will have to be answered before the social and psychological impact of television viewing upon the growing child can be known.

Effects of specific program characteristics upon individual children should be an area of primary concern.

● IT WOULD BE unfortunate, however, if all research energies were turned to the study of only the kinds of programs now in existence. Educational television represents a wide-open field for experimentation with new approaches to programming for children. Educators and psychologists no doubt have some hunches about the kinds of TV experience that would have positive value. It is never certain that a hunch can be translated feasibly into a program that will achieve the desired effects. Only experimentation will give the answer. People who are skilled in the necessary research techniques for evaluating such programs are eagerly sought by educational stations which are characteristically ready to encourage such ventures. They fully recognize the desirability of taking the guesswork out of program development.

There is nothing new about programming research in radio or television. But there are still some notable gaps that need particular attention. The possibility of stimulating viewer activity is one of these, particularly creative activity. There have been a few attempts at this, but no evaluative literature has been published. The development of problem solving and critical thinking abilities is practically an untouched area in educational TV, despite the many possibilities the medium provides. The use of TV to foster mental health also needs much research, yet has been subjected to almost none.

The possibilities are many, the need is great, and research grants for promising projects can be obtained with the assistance of the National Association of Educational Broadcasters. What better combination of circumstances could a scientist want?

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